STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

Petition for approval of delivery services tariffs and tariff revisions and of residential delivery services implementation plan, and for approval of certain other amendments and additions to its rates, terms, and conditions.	: : : : :	No. 01-0423

Phase II Direct Testimony of

DR. JAMES B. WILLIAMS

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Salient Systems, LLC

Formerly Vice President, Project and Contract Management
Commonwealth Edison Company

(PUBLIC VERSION)

ComEd Ex. 108.0

Q. Please state your name and business address.

A. My name is James B. Williams. My business address is Salient Systems, LLC, 3610 South Sterling Avenue, Tampa, Florida 33629-8733.

Q. Are you the same Dr. James B. Williams who submitted testimony in connection with Phase I of this proceeding?

A. Yes, I am.

Q. What is the purpose of your Phase II direct testimony?

A. The purpose of my Phase II direct testimony is to:

- provide the Illinois Commerce Commission (the "Commission") with information concerning ComEd's management of the capital projects that are discussed in the Liberty Consulting Group's ("Liberty's") Audit Report (the "Audit Report" or the "Report"). As discussed in this testimony, I was ComEd's executive responsible for managing the capital projects that are discussed in the Report. My testimony will discuss the extensive work performed by ComEd to ensure that these projects were properly managed in accordance with the standards applied in the utility and construction industries. I will also discuss how ComEd's management of these projects ensured that they were completed at a reasonable cost that did not include unnecessary expenses for the labor or materials involved;
- provide and explain quantitative analyses, based upon actual project data, demonstrating that ComEd's major 1999-2000 distribution system capital projects were constructed at a reasonable cost; and
- respond to Liberty's criticisms made in the Audit Report concerning ComEd's management of these capital projects. As discussed below, Liberty's criticisms of

how ComEd managed these projects are not justified. Many of Liberty's criticisms ignore material facts that were at issue in connection with ComEd's management of these projects. Others are based on assumptions that are simply not reasonable in light of accepted project management standards. For example, this is the case with respect to Liberty's incorrect conclusions that all overtime expenses over certain amounts that were incurred in connection with ComEd's projects are, by definition, unreasonable.

Q. Please summarize your testimony.

A. Based upon my personal knowledge of the facts concerning ComEd's management of its construction projects and distribution operations during my time at ComEd, and in light of my career managing construction of major projects around the world, ComEd invested and managed its resources which are subject to Liberty's criticisms in a manner that was reasonable and consistent with choices that a reasonable electric utility manager would make based upon information available to management at the time decisions were made. I understand that this is the management prudence standard applicable to this proceeding. Under this standard, there is no basis contained in the Report for disallowing any portion of the costs of ComEd's projects. Moreover, the costs of the projects incurred by ComEd were reasonable and should be approved in full by the Commission.

Professional and Educational Background

Q. Please summarize your educational background.

A. I am a 1973 graduate of the University of Tennessee and hold a Bachelor of Science degree in Forestry. After obtaining that degree, I began graduate studies and in 1978 obtained a Ph.D. in Ecology, again from the University of Tennessee. My concentration in connection with this degree was on Systems Ecology, which involved the application of systems analysis to ecological systems.

Q. By whom are you employed and what is your current position?

A. I am currently the owner of and principal consultant employed by Salient Systems, LLC. In this capacity, I am employed as a project management consultant for major construction projects for large electric utilities and other entities needing assistance in ensuring cost-efficient and timely completion of difficult projects. Previously, as is discussed in more detail below, I was Vice President, Project and Contract Management, employed by Commonwealth Edison Company ("ComEd").

Q. By whom were you previously employed, and in what position?

A. I previously served as the Vice President of ComEd responsible for managing construction of major transmission and distribution facilities. I was brought into that position during 1999 in order to bring my extensive construction management experience to bear on the management of ComEd's major capital projects, with immediate emphasis on the projects having June 2000 service dates. During my service ComEd completed these projects and many others, on time and on budget.

Q. Please summarize your professional experience.

A. In 1978, I became employed at Camp Dresser and McKee, Inc. ("CDM"), as a Project Manager. My work at CDM was my initial involvement with complex management work involving large construction projects.

At CDM, my duties consisted primarily of managing environmental permitting projects and the preparation of environmental impact statements for large construction projects that were being planned by various utilities. For example, while employed at CDM, I was involved in environmental assessments for proposed electric generating stations that were to be constructed by Consumers Power in Michigan, and also performed similar work in connection with a proposed synthetic natural gas project in Minnesota. I also performed work necessary to secure the environmental permits needed for a coal-fired generating station that was to be built for the Dairyland Power Cooperative in Wisconsin.

In 1980, I left CDM and became an Assistant Professor at the University of South Carolina. There, I taught graduate level courses in Environmental Regulation, Environmental Impact Assessment and Experimental Design. I also participated in a number of applied resource projects, including an extensive chemical and biological assessment of a 20-mile stretch of the Cooper River that was funded by a consortium of industry groups. I also developed a sophisticated water quality and energy flow analysis in connection with a successful hydroelectric dam permit application. While at the University of South Carolina, I also participated by invitation on a number of state committees that addressed issues such as hazardous waste management and the safe disposal of nuclear waste.

In 1985, I left the University of South Carolina, and joined Fluor Daniel, Inc. ("Fluor Daniel"), which at that time was the largest engineering and construction company in the world. Over the next ten years, I held a number of positions of increasing responsibility at Fluor Daniel, ultimately leading to my promotion to Project Director with responsibility for projects of up to $700 million in cost. Many of the projects that I worked on at Fluor Daniel involved sophisticated project management issues on very significant and complex construction projects. I also received extensive training while at Fluor Daniel concerning project management issues, including training related to cost control, estimating, scheduling, and contracting with respect to large construction projects.

My work at Fluor Daniel included serving as the Director of the formal alliance between Fluor Daniel and the Olin Chemicals Group (“Olin”). This work included the management of engineering procurement and construction projects at Olin manufacturing facilities throughout the country. This included managing simultaneous projects worth more than $100 million over a three-year period. I also worked as Fluor Daniel’s Director of European Environmental Support. In this position, I supported a number of complex environmental projects in Europe for large corporations such as General Motors, Phillip Morris, and Kraft.

My most significant assignment at Fluor Daniel was being Director of the Fernald Environmental Management Project, which involved the remediation of an operating unit of a Department of Energy facility that had been used for uranium manufacturing. This project involved the coordination of numerous contractors and had an annual budget of $700 million. Under my management, Fluor Daniel completed all project milestones on time and received a performance fee of 100%. While working on this assignment, I was also responsible for leading the Integrated Site Restoration Planning Team. In this capacity, I coordinated the activities of over 1,000 contractor personnel. My work in connection with this Team included responsibility for developing a sophisticated project schedule and cost model for the entire $3 billion program.

In 1995, I left Fluor Daniel to join the Morrison Knudsen Corp. ("MK") as the Senior Vice President in charge of its Industrial Process Division. At MK, I continued my work on large construction projects. For example, I was the Executive Sponsor of the alliance between MK and the Shell Oil Company that was formed to perform work at the Rocky Mountain Arsenal facility located near Denver, Colorado. The requirement was to transform the facility from one used for the production of chemical warfare nerve agents into a wildlife refuge. This involved the engineering, construction, and operation of a sophisticated incinerator used to destroy nerve agent materials. The total cost of this project was in excess of $2 billion.

At MK, I was also the executive-in-charge of an $800 million construction management contract with the United States Department of Energy for its facility located in Oak Ridge, Tennessee. Much of this work was related to the facilities used by the Department of Energy for the construction of nuclear weapons. In connection with this project, I was responsible for a construction work force of between 700 and 1,000 employees and craft personnel. My work at MK also involved developing a plan for British Nuclear Fuels, Limited ("BNFL"), which at that time was owned by the Government of the United Kingdom. BNFL's operations include re-processing all of the fuel rods used by nuclear facilities located in the United Kingdom, France and Japan. In the late 1990s, Prime Minister Tony Blair proposed a plan to privatize BNFL, provided that it could improve its safety record and decrease costs. I developed a plan in response to this proposal to re-engineer BNFL's operations to meet these goals. This plan led BNFL to select MK to be its Strategic Partner in connection with privatization efforts. I was to relocate to England and begin work as the Executive-in-Charge for MK's work with BNFL when I decided to join ComEd.

I left MK to join ComEd in December 1999. As stated above, I was ComEd's Vice President, Project and Contract Management from that time through June 2002. My work with ComEd is more fully discussed below. While at ComEd, I had primary responsibility for the project management of large capital improvement projects that were performed with respect to ComEd's distribution system. This work included the projects discussed in the Report, including the substantial work performed at ComEd's "Six Pack" substations, such as the Diversey, Northwest, Kingsbury, and Ohio substations, which are located in the northern portions of Chicago.

After I left ComEd, I formed Salient Systems, LLC ("Salient"). At Salient, I provide project management consulting services for a number of large companies including DuPont, Entergy, Home Depot and Consolidated Edison. Services I provide in this capacity include consulting services relating to contracting strategy development and project delivery system improvement.

<u>Project Management Work Performed at ComEd</u>

Q. Please describe your responsibilities as ComEd's Vice President, Project and Contract Manager.

A. As ComEd's Vice President, Project and Contract Management, I was ComEd's executive with primary responsibility for the management of large construction projects that were ongoing involving ComEd's transmission and distribution systems. In this capacity, I was ComEd's executive responsible for many of the capital projects that are discussed in the Liberty Report. One of my principal responsibilities during this period involved managing ComEd's construction work at the Six Pack substations that are referred to above. In addition, I also was responsible for managing projects throughout ComEd's system, such as the Cary and Algonquin projects and others that are referred to in the Audit Report.

My responsibilities as ComEd's Vice President, Project and Contract Management also extended to contract administration for services contracts. This involved the selection of contractors and the contracting strategy for ComEd's projects. Once a contractor was selected, it also involved managing the contract relationship to ensure that the contractor complied with the contract terms and conditions, and provided the agreed-upon performance to ComEd. I also worked to ensure that any change orders to ComEd contracts were arrived at in a fair and economical manner and to ensure that all contractor invoices were reviewed and paid in accordance with contract terms.

In performing this work, I relied on my substantial experience in project and contract management that is discussed above. As a result of this experience, I worked to ensure that ComEd's management of these projects was done in a manner that was consistent with the most advanced project management standards and practices that are employed in connection with large construction projects.

Q. What did "project management" in connection with your work at ComEd consist of?

A. "Project management" in connection with my ComEd work consisted of implementing plans that had been developed by other ComEd departments for improvements of ComEd distribution or transmission systems. The need for these projects was identified by ComEd's system planning personnel. After this occurred, ComEd's engineering personnel developed engineering plans for the type of improvements needed to meet the system conditions at issue. Project management involved the process of taking the engineering plans that had been developed and implementing them. The primary goal of project management is to ensure that plans are implemented accurately, on schedule, on budget, and safely. Accomplishing this involves a number of things, including selecting contractors and internal personnel who will actually perform the work necessary to complete the project. It also involves responding to conditions that are discovered during a project that were not known to engineering personnel who developed the project plans, and effectively managing the necessary work that results when these conditions are identified.

Q. Please describe ComEd's approach to project management while you were the Vice President, Project and Contract Management.

A. Under my supervision, ComEd managed projects involving the improvement of its distribution and transmission systems in accordance with the project management practices that I had learned and developed throughout my career. While I was working as ComEd's Vice President, Project and Contract Management, projects were managed in accordance with uniform project management procedures and practices that were developed by ComEd management personnel. Many of these procedures and practices were summarized in the "Project Management Commandments" that were implemented and followed during the course of ComEd's distribution and transmission system work, a copy of which Commandments is attached as ComEd Exhibit 108.1. These Commandments addressed project management issues such as developing the proper budget for specific projects and ensuring that budgets were maintained throughout the project duration. In addition, I also worked to secure the most qualified personnel for

ComEd project management work and to provide those personnel with quality project management training. Finally, I also worked to improve ComEd's safety procedures in connection with projects that were performed.

Q. Please describe the procedures that were employed in connection with the management of ComEd's projects.

A. Pursuant to the procedures that were summarized in the Project Management Commandments that are attached, a uniform set of good management practices was employed in connection with ComEd's projects. For example, the procedures provided for a single Project Manager who would be ultimately responsible for the Project implementation. They also provided that each project have a specified project scope that identified who was responsible for each project phase. The Project Manager was also responsible for using approved scheduling and cost control systems. In addition, the procedures required all potential changes in project scope to be reported to project management so that they could be assessed and challenged. Finally, the procedures required periodic meetings beginning at the kickoff and continuing during the course of the project, as well as monthly reports on project progress to senior management.

Q. Please describe how project budgets were controlled as part of ComEd's procedures.

A. Project managers were responsible for meeting the project budgets that were developed when the projects were initiated. As a general matter, the project managers were responsible for delivering the approved project scope in a safe manner, on schedule and on budget. Throughout the project, the project manager was responsible for adhering to the original project budget, after the increases or decreases resulting from change orders were taken into consideration. Change orders are changes to the scope of the original project scope that often are required during the course of projects. Change orders are the result of project conditions that were not known when the original project plans and budgets were initially developed. The cost impact of change orders was controlled through ComEd's rigorous challenge process that was employed to review scope and cost changes. In addition, ComEd also used professional cost estimators to analyze contractor cost proposals and change orders.

Q. Were project overtime costs addressed as part of ComEd's project management procedures?

A. Yes. Managing overtime costs was one aspect of the overall cost control responsibilities of the project manager. For cost-reimbursable contracts, project managers reviewed proposed overtime expenses just like any other expense as part of their responsibility to control overall project costs. For fixed-price contracts, the contractor's level of overtime did not impact ComEd's cost. It is also useful to note, however, that overtime could be used in certain instances to lower project costs. For example, project managers were aware that incurring overtime was necessary at certain times when a portion of project work needed to be performed by specific trades before other project work could continue. In such circumstances project managers used overtime to complete the critical path project work so the overall project work could be continued as soon as possible.

Actual Cost Data And Quantitative Analyses Demonstrate That ComEd's Six Pack Project Costs Were Reasonable.

Q. Please comment on Liberty's assertion that the Illinois Commerce Commission should disallow millions of dollars of investment in distribution capital investments, including investments related to the Six Pack projects.

A. Liberty recommends removing millions of dollars from ComEd's allowable capital spending based wholly on meritless assumptions. Liberty assumed that ComEd's year 2000 capital projects costs must have been inflated by "rush procurement", "excess overtime", and a lack of "effective project management". Liberty also speculates that the projects suffered from excessive change orders and a lack of "proper controls". Although Liberty devoted dozens of pages of text to its arguments, not a single dollar of unnecessary or unreasonable capital spending was identified. The purpose of this section is to examine the reasonableness of the largest year 2000 projects, the so-called "Six Pack", using actual cost data and purely quantitative analyses.

Q. Please describe the actual cost data and quantitative analyses you refer to demonstrating that the costs of ComEd's "Six Pack " projects were reasonable.

A. There are several. First, quantitative analysis shows that the contractor overhead and profit costs paid by ComEd for construction of the Six Pack substation projects were reasonable. Second, the total project costs were reasonable based upon comparison of the Six Pack projects' cost per unit of electrical output with the cost per unit of output of other projects constructed by ComEd in recent years. Third, analysis of the actual data by professional estimators demonstrates that the total cost of the Six Pack projects paid by ComEd is within about 1% of the cost if the same facilities were to be constructed today.

Q. Please describe, and explain the significance of, the analysis concerning contractor overhead or profit cost paid by ComEd for construction of the Six Pack substation projects.

A. The first aspect of capital cost to be examined is the contractor's overhead and profit. ABB was the prime contractor for the Six Pack substation projects. ComEd's contract with ABB was for a fixed price (sometimes known as lump-sum), which means that overhead and profit are combined with all other cost elements and are not normally disclosed. However, as an accommodation to ComEd, ABB voluntarily has disclosed its realized gross margin on all of the Six Pack projects. Gross margin is the total of overhead and profit, and equaled % for all Six Pack work combined. This is a very reasonable rate, especially considering the risk ABB bore on cost and schedule performance. In fact, 20% is the target gross margin for some large project execution companies on their low-risk projects. The facts show that there was no unreasonable contractor overhead or profit cost on the Chicago Six Pack. Liberty concurs. The significance of this fact is that ComEd paid a reasonable overhead and profit cost to its contractors for the extensive, complicated and successful project completions that were achieved.

Q. Please describe, and explain the significance of, comparing the costs of the Six Pack substation projects with the costs of other recent ComEd substation projects.

A. The following analyses address the total project cost. If the year 2000 projects suffered from excessive cost, as claimed by Liberty, then the 2000 projects should have cost more per unit of installed substation electrical capacity, megavolt-amperes ("MVA"), than comparable, well-managed projects.

To examine this possibility, the new substation constructed in downtown Chicago in 2000, Diversey, was compared to ComEd's new downtown substation projects that were completed in 2001 and 2002, Kingsbury and State, respectively. To make the comparison as fair as possible, the scopes of facilities were normalized to account for differences in property cost, transmission and distribution facilities, and environmental factors. The results show that Diversey cost $222 per MVA, Kingsbury cost $382 per MVA, and State cost $329 per MVA. Thus, the empirical data show that the new substation constructed in 2000, Diversey, cost less per unit of electrical output than comparable substations constructed in 2001 and 2002. ComEd also performed major upgrade work at the other substations making up the Six Pack projects, using the same contractors and team of project managers, and ComEd's established project management and procurement practices. The significance of this analysis is that ComEd's costs for its Six Pack projects were consistent with (and in some cases were less than) the costs of comparable work subsequently performed by ComEd, on a per unit of electrical output basis. This shows that ComEd's costs for the Six Pack projects were reasonable judged on this objective and quantitative basis.

Q. Please describe, and explain the significance of, the cost estimation analysis of the quantities of materials actually installed in the Six Pack projects using current unit costs updated through 2002.

A. Although the year-to-year analysis described above normalized the facilities that were compared, the results were from different substation projects. The ultimate, although impractical, test would be to re-build the exact facilities in another year and see if the costs were less. The following analysis performs this test in a conceptual manner. As part of the ongoing, multi-year project management program at ComEd, the costs per unit of work have been measured for all substation projects. Typical units of work include a foot of cable installed, a cubic yard of concrete poured, a square foot of building completed, a ton of steel erected, etc. These units are developed by professional estimators and are used by ComEd for budgeting, contracting, and project control.

The test was for professional estimators to apply the most recent unit costs (updated through 2002) to the exact scope of facilities (types and quantities of units) that were constructed in the Six Pack . Hence the resultant theoretical price for the Six Pack would be free of the effects of "rush procurement", "excess overtime", or lack of "effective project management" claimed by Liberty. The outcome of applying the most recent unit costs to the Six Pack scope of facilities was a price within 1% of the 2000 actual cost. Although the more recent unit costs include two years' worth of escalation, I believe this is more than offset by new Exelon-level procurement discounts, implementation of a rigorous value engineering process, and contracts that provide incentives for cost avoidance. This experiment shows that the year 2000 Six Pack project costs were virtually the same as costs for similar projects in later years.

Q. What is the significance of the cost analysis performed by the professional estimators that you have described?

A. The cost analysis provides further proof that ComEd paid a fair and reasonable amount for the Six Pack projects. The fact that these projects were constructed for a contract price materially equal to the construction estimates shows that ComEd paid nothing extra for doing so much work in a short period of time.

The results of the cost analysis are shown in ComEd Exhibit 108.2, attached to my testimony. The chart shows that ComEd's total cost paid for the Six Pack is actually slightly less than the results of the estimator's analysis using actual construction quantity and ComEd unit price data. If anything, ComEd got slightly more than it paid for. This contrasts starkly with the disallowance proposed by Liberty, which is not based on any such fact-based analysis. Liberty's proposed disallowance should be rejected.

Q. Please summarize your conclusions concerning the reasonableness of the costs of ComEd's Six Pack projects based upon the quantitative analyses described above.

A. In summary, analysis of objective quantitative data demonstrates that the costs of the Six Pack projects were reasonable. There is no factual basis for a reduction in allowable capital spending. That the work was necessary is undisputed. Liberty identified no specific unnecessary or unreasonable costs. Analysis of the data refutes Liberty's speculative findings. The contractor's overhead and profit were reasonable. The capital cost per unit of electrical output was reasonable and in fact was lower than in other years. The capital cost per measurable unit of construction activity was reasonable. The capital cost per unit of work accomplished was essentially the same as in other years. While ComEd accomplished a great deal of project work in 2000, according to the actual data, ComEd's project costs were typical of other years. This conclusively demonstrates that ComEd's Six Pack project costs were reasonable, and that, using objective measures, project costs were not excessive.

<u>Overview of ComEd Construction Practices and Results</u>

Q. Please summarize what factors were responsible for setting the construction schedules for the projects that are the subject of the Liberty audit.

A. For the projects that are the subject of the Liberty audit, schedules were driven by:

- The standard ComEd (and utility) project delivery cycle. Summer peak load information defines projects that must be completed before the next summer.

- ComEd's partnering with ABB, General Electric ("GE") and Electric Power Research Institute ("EPRI") for state-of-the-art analysis and the resulting change in system planning criteria from most probable (50%) to extremely hot (90%) weather conditions.
- The resulting identification of new projects and reprioritization of potential projects.
- The unequivocal commitment to improving reliability.

Q. Please comment on ComEd's overall execution of the projects reviewed by Liberty.

A. The projects reviewed by Liberty were well executed and the work was conducted safely. Many experts consider safety performance as the best single indicator of the effectiveness of a construction program. ComEd's contractor safety performance was better than the utility industry average and improved steadily throughout the audited period. Cost control was exemplary. Actual cost performance was within 2% of the approved aggregate project budgets for the audited projects. Seasoned estimating professionals prepared budgets and checked estimates. The service dates were met and the facilities functioned as intended. Although the work was incredibly complex, it was conducted in a planned, orderly manner with very few operating incidents or unplanned outages. For these and many other reasons, there is no reasoned basis for Liberty's assertion that ComEd's proposed net rate base should be reduced with respect to the Six Pack projects.

<u>Overview of Liberty Criticisms of ComEd Management</u>

Q. Based upon your construction industry experience, and first-hand knowledge of the projects discussed in the Audit Report, do you have any overall observations concerning the quality and accuracy of the management analysis contained in the Report?

A. Yes. The Liberty Report does not accurately reflect the decision making processes of electric utility and construction management professionals experienced in overseeing real-life electric utility industry projects. There are so many shortcomings in the Report as to make it fundamentally unreliable as a basis for disallowing the costs of projects that are discussed in the Report. Major shortcomings include that the Audit Report:

- Repeatedly misrepresents preliminary planning cost estimates as project budgets in order to portray a lack of cost control.
- Draws erroneous conclusions about "excess costs" based on a fundamental misunderstanding of fixed-price, unit-price, and base price contracts.
- Demonstrates a comprehensive ignorance of basic utility construction realities. A simple example is that key outages usually are scheduled on weekends or at night when system loading is reduced. This kind of ignorance of basic utility construction practices is but one of many reasons why there is no basis for Liberty's contractor overtime limit based on five 10-hour days per week.
- Fails to acknowledge the time value of money.
- Completely ignores the impact of load growth on ComEd's capital spending and does not distinguish between capacity and reliability projects.
- Ignores the standard, traditional ComEd (and utility) project schedule. Summer peak load information defines projects that must be completed before the next summer.
- Ignores the fact that many tasks on large construction projects require a great deal of setup time on a daily basis. In these cases overtime is more efficient than

straight time since the total time to execute work is much less than the premiums incurred for overtime.

- Ignores the very competitive labor market in the Chicago Area at the time of construction. Overtime is the key attraction to attract the necessary skilled tradesmen. Another attraction is guaranteed employment that does not make business sense.

Q. Taking into account all of these consistent shortcomings in assessing ComEd's construction projects discussed in the Report, does Liberty offer any reasoned basis for disallowing any portion of the costs of ComEd's projects and related procurement?

A. No. A really amazing feature of the Report is this: after spending months of time and millions of dollars, Liberty cannot identify any specific projects, tasks, or procurements that were unnecessary or imprudent. Simply put, if Liberty cannot demonstrate that any such projects, tasks, or procurements were unreasonable, there should be no recommended disallowance at all. But instead of conducting such an analysis and offering some reasoned basis for disallowing individual projects, tasks, and procurements based on consideration of what managers knew or did, Liberty simply invents things – for example, a 10% limit for ComEd overtime, a 20% limit for contractor overtime, a 5% penalty for "rushed procurement", and a 5% penalty on project management. None of these recommended reductions is supported in the Report by facts from the audit. And, there is no basis in the construction or electric utility industries for any such "rules of thumb" of purported inefficiency. None of Liberty's recommended disallowances is supported by reasoned analysis and discussion considering what information was available to utility managers at the time the decisions were made, and what alternative courses of action were available.

Q. Liberty asserts that delays in ComEd's expenditures resulted in excess capital costs due to spending inflated dollars. (Report at I-4). Based on your experience, is Liberty's assertion correct?

A. No. This is an overly simplistic assertion that neglects one of the first rules of the construction business, and any business for that matter – which is the time value of money. Liberty neglects to recognize the basic principle that reasonable business decision makers do not make capital investments before they are necessary, based upon available information. Other ComEd witnesses are speaking to analyses of investment timing as it relates to ComEd's system planning. But the absence of appropriate recognition of this basic rule is a glaring omission in the Report.

Q. Liberty's Report refers to self-critical observations made by ComEd management. Please comment on Liberty's reliance on self-critical statements made by ComEd management.

A. The hindsight self-critical statements relied upon by Liberty reflect ComEd's ongoing efforts to improve its business and service to customers, and have nothing to do with whether decisions of ComEd management were reasonable at the time they were made. My experience is that companies that strive to be top-notch engineering and construction organizations frequently make and use self-critical statements to identify areas for improvement. It is therefore both unfair and a serious analytical mistake to rely upon ComEd's hindsight self-critical comments as any basis for judging the prudence of ComEd's management actions. On the contrary, in my experience the fact that ComEd or other companies engage in such self-criticism is one of the hallmarks of reasonable utility and construction management.

Q. Based upon your experience as a senior management official at ComEd, can you provide any specific examples of misuse of self-critical statements in the Audit Report?

A. There are many, but some good examples are listed at page I-5 of the Audit Reports. Liberty quotes portions of a self-critical document prepared by ComEd in 2001. The purpose of the document was to share lessons learned and identify areas for future improvement from ComEd's successful experience constructing its major 2000 capital projects. Rather than reflecting the purpose of the document, Liberty instead uses it as the premise of an unrelated conclusion that ComEd's statements "confirm that work efficiency remained a problem during 2000." In order to demonstrate this clear misuse of a hindsight document, the following provides quotations of the comments relied upon by Liberty, and the underlying business circumstances not reflected by Liberty.

- "Poor definition of the so-called Six Pack projects" – I have managed large construction projects around the world, for many industries, for many years, and based upon my experience, the Six Pack projects were well defined based upon information available to management at the time decisions were made. For these projects new system planning priorities were defined after a first-in-the-industry unique partnering of ComEd, ABB, GE, and EPRI resulted in a completely new form of reliability analysis. Project definition developed in an orderly manner, from conceptual to detailed, in coordination with the contractor. As project scope became more defined, contracts were amended to reconcile the budget and schedule to the scope. This is a great example of a hindsight comment made to improve performance in the future. In fact, project definition was entirely reasonable based upon the information available at the time project definition decisions were made.

- "Lack of cost estimating standards" – ComEd's management decisions concerning cost-estimation practices for the Six Pack projects in fact were entirely reasonable and appropriate. The Six Pack projects were competitively bid to the only qualified bidders. In such circumstances, companies like ComEd seeking bids do not prepare their own internal detailed cost estimates, as these would be redundant. By the same token, however, for projects that were negotiated with a single-source provider, seasoned professionals who were under contract to ComEd performed estimates for the work. This is an area where cost estimating would be reasonably expected and adds substantial value. Likewise, major change orders were professionally estimated so that ComEd could validate the costs. Again, cost-estimating in these circumstances is considered a reasonable industry practice and it was fully and effectively utilized by ComEd.
- "Failure to approve a capital budget until June" – This self-critical statement reflects a fact that had no impact at all on ComEd's management decisions concerning the Six Pack projects. The correct question from a management perspective is whether ComEd's management knew and was in control of its expenditures for the project, as expenditure decisions were made. In fact, all senior executives and the Board of Directors were fully aware of the capital spending for the Six Pack long before the corporate formality of budget approval. Based upon my construction industry experience both prior to and after working

at ComEd, ComEd's senior management had far more than reasonable knowledge of and participation in the spending decisions for the Six Pack projects.

- "No competent cost reporting system" – This self-critical statement is incorrect, and I know of no factual basis for it. Assisted by professional cost engineers, the project managers had and used accurate cost information on a weekly basis. I reported cost variances accurately to senior management on a monthly basis. ComEd's cost reporting practices and procedures were reasonable, and the Liberty Report fails to indicate any unreasonable instance of cost reporting, or of any increased cost due to cost reporting.
- "No effective work management process" – This self-critical statement has nothing to do with the reasonableness of ComEd's construction and its costs. The formal industry concept of work management applies to the systemization, nowadays using information technology systems, to improve efficiency of high volume, routine, repetitive, and ongoing tasks such as maintenance. While construction of complex facilities is a highly organized and specialized business, which ComEd carried out reasonably based upon industry practices, work management systems are neither expected nor required for construction of facilities like the Six Pack projects.
- "More than 300 fast-track projects" – This is cited as a self-critical statement, but in fact reflects the system requirements for ComEd essentially every year as a result of the analysis of summer load information and the definition by system planners of "projects" to improve reliability and capacity. Most of these projects are comparatively straightforward, and can be accomplished by a ComEd crew in

a week or less. The new information available to ComEd in 2000 resulted from implementation of the ability to closely track, and improved ability to effectively coordinate, so many concurrent activities through the capabilities of the Integrated Planning and Control ("IPAC") organization.

- "8 percent overruns on centrally managed projects" – The basis for Liberty's contention is not clear. The available historical data show that the aggregate actual cost of centrally managed projects in 2000 was less than the aggregate approved budget. The aggregate cost of the Six Pack projects was 2% under budget. Budget, as in all construction projects, is defined as the approved construction estimate plus or minus approved change orders.
- "36 percent overrun on regionally managed projects" – This self-critical statement is on its face no more than hindsight and has nothing to do with the reasonableness of ComEd's management of regionally-managed projects. Regionally-managed projects comprise performance of hundreds of small "projects". Most of these were so small that detailed planning and estimating were not appropriate. Indeed, such indirect costs could exceed the direct cost of the work. Therefore, work was initiated using a conceptual cost estimate. If a crew encountered unusual conditions or additional equipment in need of attention, they were appropriately expected to perform and report progress on the necessary work. Fundamentally, this is a good example of how ComEd performs capital work based upon what conditions show is needed in the field.
- "Cumulative overrun of more than $100 million" – Liberty uses this statement as a jumping-off point to claim that "Energy Delivery's capital expenditures

exceeded plans by over $100 million and 19 percent and that O&M expenditures exceeded plans by about $50 million and 9 percent," claiming that the amount of unplanned work by ComEd in 2000 was "very significant". (Audit Report at III-5). This is incorrect. In fact, very little unplanned work was performed in 2000. The unplanned work consisted mostly of storm and emergency response. The 300 concurrent projects referred to above were scheduled and meticulously monitored and reported on. The reason that expenditures exceeded budgets is that the budgets are set (every year) in advance of the development of the work plan, which is driven by the previous summer's peak load data. Hence, the 2000 budget did not include the new projects that were developed as a result of the new, first-in-the-industry analyses conducted in 1999 by ComEd with ABB and others. Senior management was informed of the new projects, concurred with the need to proceed, and ComEd expended the necessary resources. Liberty's conclusion is exactly the opposite of reality – in 2000, the amount of planned, not unplanned, work increased.

Q. Please comment on Liberty's observation that, by contrast, 2001 showed significant improvement in planned versus actual capital expenditures. (Audit Report at I-5).

A. This is another example of how hindsight runs rife through Liberty's conclusions. The "improvement" pointed to by Liberty concerning 2001 was that the projects identified in late 1999 were known to management in advance of budget preparation.

Q. Please comment on Liberty's characterization of ComEd as conducting large distribution capital projects in 2000 "while ComEd was in the midst of remediation programs". (Audit Report at I-5).

A. ComEd's capital program for 2000 had nothing to do with remediation. It was the result of the application of new resources, new methods of analysis, and an unequivocal commitment to reliability from John Rowe.

Q. Is Liberty's assertion that ComEd performed "rushed procurements" of capital goods and services during 2000 correct? (Liberty Report at III-6).

A. No. ComEd procured capital goods and services using reasonable and accepted procurement practices based upon information available to management. Substantial procurements were needed in order to accommodate ComEd's business objective of having, as it does each year, substantial capacity additions installed in time for the next year's cooling season. ComEd procured services and goods consistent with this schedule as a normal part of utility operations. This is reasonable and consistent with how business is done in the electric utility industry. It is absolutely incorrect, therefore, for Liberty to label such regular and accepted transactions as "rushed procurements".

For example, Liberty ignores the fact that major capital equipment, such as large transformers and high voltage switchgear, commonly have lead-times of more than one year. The manufacturer does not hold these items in stock. Rather, the utility's order for such equipment secures a production slot in a factory. For ComEd to put a facility in service by June 2000 that was identified as a requirement in late 1999, it was necessary under some circumstances to expedite, at a reasonable additional cost, the delivery of major equipment. This is a reasonable and accepted utility and construction industry practice, and to use a pejorative term such as "rushed" for such a procurement is incorrect. Liberty simply ignores the fact that the only alternative to ComEd's management decision to obtain needed equipment and services was to defer purchases and delay the service date for projects to 2001, which was not consistent with ComEd's business objectives.

Q. Is Liberty correct in claiming that ComEd's "Delta Star Transformers" procurement is an example of a rushed procurement? (Audit Report at III-7).

A. No, it is not. ComEd adopted new, more rigorous system planning criteria in late 1999. The four projects discussed in this portion of the Liberty Report were then determined to be necessary for summer 2000. ComEd searched the market for suppliers that could accommodate the required schedule. Only Delta Star met the requirements. That Waukesha's bid was less is irrelevant. The Waukesha bid was not responsive for the purpose of the project. There is no basis for describing this procurement as "rushed", and no basis for elimination of any capital cost from the rate base.

Q. Is Liberty correct in claiming that ComEd's "ABB Transformers" procurement is an example of a rushed procurement? (Audit Report at III-7 through III-8).

A. No. Two transformers at Northwest substation failed in July 1999. The failure of the transformers could not have been anticipated or planned for. ComEd surveyed the market for vendors who could provide replacements in time for peak summer loads in 2000. Only ABB would commit to the necessary schedule. Not only was SMIT not able to commit to the required schedule, but ComEd had also experienced significant problems with SMIT's meeting their its schedule commitments. ABB was selected. This was a reasonable course of action. The alternative, which is not articulated by Liberty, would have been not purchasing the transformers to provide service in June 2000, and letting customers wait another year. Deferring replacement of failed transformers would not have been a reasonable course of action. The need to replace such equipment on a short time horizon is a normal part of utility operations, and there is no basis for describing this procurement as “rushed”. ComEd’s procurement was reasonable, and there is no basis for eliminating any capital cost associated with this transformer purchase.

Q. Do you agree with Liberty’s assertion that ComEd’s “LaSalle Conduit Installation” is an example of a rushed procurement? (Audit Report at III-8).

A. No. ComEd paid $10,000 to advance the schedule of a $1,748,765 project by one month. This amounts to an increase in project cost of less than 0.6%. ComEd paid this small amount in order to improve outage coordination and the interfaces with ComEd and contractor workforces. Obtaining the one-month advance in the schedule decreased ComEd’s overall risk in terms of being able to successfully put the station into service when it was needed, and paying $10,000 to obtain this risk reduction was excellent business judgment. Liberty’s apparent alternative of not advancing the schedule would not have provided this improved assurance of having the station in service. Because ComEd in fact met its target service date, Liberty is in the position of claiming after the fact that the less than 0.6% increase in project cost could have been avoided. No reasonable utility manager would have chosen Liberty’s course of action, which is premised entirely on 20-20 hindsight.

Q. Liberty claims that during 1999 and 2000 ComEd increased the speed with which projects were completed. (Audit Report at III-8). Is this correct?

A. This was not the case. As I explained above, ComEd’s project delivery cycle did not change. The projects were larger and more complex, but were completed on the usual annual delivery cycles. To ComEd's credit, it got them all done safely, efficiently, and at a reasonable cost that compares favorably to other projects in other years.

Q. Liberty claims that ComEd should have been able to provide construction cost estimating and scheduling services using internal resources and hence avoid the cost of the contract to Sun Technical Services. (Audit Report at III-9). Please comment.

A. Liberty's claim is wrong for several reasons. The premise of Liberty's claim is that the only reasonable course of action a utility can take is to have professional construction cost estimating and scheduling employees on its permanent payroll.

Liberty's premise is absolutely incorrect. Far from being the only reasonable course of action, Liberty's proposal is something that in my experience is not done by other utilities. Neither ComEd, nor most other electric utilities, maintain professional estimating and scheduling resources internally. Indeed, these are some of the most highly sought after resources in the construction industry.

Early in 2000, the decision to outsource this capability was made because: (1) these are not core competencies of electric utilities; (2) these are core competencies of companies in the engineering and construction business; (3) ComEd would enjoy lower cost and higher performance by using professional resources on an as-needed (contracted) basis, rather than developing and maintaining the capability internally. This decision was reasonable based upon information known to management, and was entirely correct and consistent the reasonable construction and utility business practices. There is no basis for disallowing these costs.

Furthermore, Liberty's logic in seeking to disallow the reasonable costs of these necessary services is flawed. It would be appropriate to remove this cost from the rate base if ComEd had paid for estimating services twice – internally and externally. In reality, ComEd paid only for external resources. It would have cost at least as much to perform this work internally, regardless of the project schedule, since employing professional estimators on a permanent basis would result in incurring the associated costs through the “valley periods” where their special expertise is not needed, as well as during the “peak periods” when it is needed.

Q. Liberty claims that ComEd should have been able to provide professional services in support of upgrading oversight at the Diversey, Kingsbury, and Northwest projects using internal resources and hence to avoid the cost of the contract to Genex Corporation (“Genex”). (Audit Report at III-9). Please comment.

A. In 2000 ComEd contracted with Genex for highly technical services supporting the testing and commissioning of substations. This type of contracting has been common in many other years as well. Such services are needed because the standard utility project cycle results in several project facilities being tested and commissioned concurrently during the late spring every year. Qualified testing resources are very scarce in the electric utility industry. Over the past few years ComEd has trained several testing technicians, only to have them leave to start their own businesses or join specialty firms such as Genex. The need for these resources is highly seasonal. Rather than maintaining scarce and expensive resources at an excessively high level for most of the year, ComEd made the reasonable business decision to contract for the spring peak demand.

Liberty’s proposed alternative, on the contrary, would again have required ComEd to incur the higher cost of permanent staffing levels for specialized personnel based on sporadic peak requirements. Far from being the only reasonable course of action, as Liberty's position maintains, Liberty is again proposing a course of action that no reasonable construction or utility manager would engage in.

Q. Liberty asserts that the Commission should disallow the costs for project management support from PMA Consultants because, "[i]t is likely that ComEd could have performed the work at no incremental internal cost had it made system reinforcements on a timelier basis." (Audit Report at III-9). Is Liberty's position correct?

A. No. PMA Consultants was retained to support the Kingsbury substation project. ComEd was conducting several significant projects concurrently, and needed to fill a peak project management requirement that would have been unreasonable to staff permanently. ComEd evaluated: (1) attempting to develop the project support resources internally, (2) hiring additional resources, and (3) contracting for only the specific skills that were needed for a specific time. Option three presented itself as the most cost-effective solution, and ComEd reasonably decided to hire PMA Consultants.

Moreover, ComEd decided based upon its first-of-a-kind in the industry 1999 analyses to build the Kingsbury substation. Liberty, in contrast, offers no engineering or other analysis of its own supporting its claim that the Kingsbury substation project could have or should have been performed "on a timelier" basis. For this additional reason, ComEd's costs of using PMA consultants should be approved, and Liberty's claim should be rejected.

Q. Liberty claims that the Commission should disallow the costs of the permit expediting support provided by CBCS Company, because of "remedial activities" undertaken to meet summer-critical 2000 project deadlines. ("Audit Report at III-10). Was the need for CBCS Company's services occasioned by "remedial activity"?

A. No. CBCS Company was hired to support the Kingsbury project. Permits are a reasonable and necessary cost of constructing facilities. The facility was in no way a remedial activity. And permit expediting is yet another example of a specialized skill that ComEd assessed and decided to procure as it was required, rather than employ additional personnel on a permanent basis to meet a peak staffing requirement.

Q. Liberty claims that the Commission should deduct the cost of work performed by Patrick Engineering for engineering design services, on the theory that ComEd could have required ABB to perform the work "under more normal project conditions." (Audit Report at III-10). Is Liberty correct?

A. No. In the fall of 2000, ComEd hired Patrick to convert the construction drawings prepared by ABB into the format of ComEd's engineering standards. Liberty recommends removing the cost of this work from the rate base. Liberty appears to believe that ComEd paid twice for this service, once to ABB and once to Patrick Engineering. Otherwise, there is no possible basis for recommending removal. In fact, ComEd paid only once. The drawings produced by ABB were intended only to support ABB's construction efforts, and did not require the formality and painstaking accuracy of ComEd's standards. ComEd's higher standards for permanent drawings derive from the fact that ComEd must operate and maintain such equipment for decades. ABB's price to ComEd properly did not reflect this level of effort for drawings. Patrick Engineering had recent experience in providing drawings conforming to ComEd's engineering standards. Therefore, Patrick had no need for a "learning curve" and hiring Patrick represented a cost-effective solution.

Liberty is implicitly asserting that the only reasonable action a utility manager could have implemented is to hire ABB to do the drawings. What Liberty neglects to consider, however, is that a reasonable utility manager deciding who should do the drawings would take into account that ABB, while a fine contractor, did not have the experience that Patrick Engineering had with ComEd's company-specific drawing standards. If ComEd had specified these drawings in its request for proposal, ABB likely would have had Patrick Engineering perform them and added the cost to its base price. Based upon this analysis, ComEd's decision was reasonable, and Liberty's disallowance should be rejected.

Q. Liberty contends that ComEd should have performed work with internal resources that it contracted out to Estes Group, Inc., and that the costs of the work should be disallowed. (Audit Report at III-10). Please comment.

A. Estes Group is a highly specialized construction management company. Construction management professionals are brought in by many utilities and construction companies to supplement oversight activities for peak periods of construction. To have a full staff of professionals on the bench waiting for the construction projects does not make business sense. There is no basis for Liberty's assertion that ComEd was unreasonable in choosing to fulfill such a need with contractor resources.

Q. Liberty recommends removing 5% of the aggregate value of single-source procurements, resulting in a $1,869,095 reduction to rate base. (Audit Report at III-11). Please comment on Liberty's recommendation.

A. During 1999 and 2000 ComEd had highly trained and experienced procurement professionals, who followed appropriate procedures, with proper supervision, and conducted numerous forms of procurement on a continuous basis. Some procurement was done on a competitively bid basis, other procurement was single sourced. If one follows Liberty's logic, it would always be imprudent to fail to competitively bid each and every procurement of goods and services. Liberty's position fails to acknowledge the real life decisions that are constantly faced by construction and utility companies, wherein it is routine to use both competitive bidding and single source contracting, as appropriate. There is no basis for any criticism of ComEd's decisions to use single source bidding during 1999 and 2000. Simply put, single source bidding is an entirely appropriate tool for procurement, which was reasonably used by ComEd subject to appropriate procedures and supervision.

Q. What basis does Liberty offer for its claim that 5% of the value of single source bids should be disallowed?

A. Liberty's recommendation is based on incorrect facts and bizarre logic. At the bottom of page III-14 of the Report, Liberty cites a survey stating that 60% of respondents were disappointed, at one time or another, with the performance of single-source suppliers. This is unconvincing. At one time or another almost every buyer becomes disappointed with the performance of every supplier – single-source or not.

Furthermore, the cited survey appears to relate to the purchase of materials, whereas the reductions recommended by Liberty are almost exclusively for services. The procurement of services is very different from buying materials. There is a definite trend in the purchasing of services toward establishing long-term, value-added, partnering-type relationships. Within these relationships are many single-source contract awards.

At page III-15 of the Report, Liberty cites an unnamed study stating that single-source procurement is only appropriate in special cases. Again, the cited study appears to refer to materials procurement. Liberty looks at twelve of ComEd's competitive procurements for services and materials and calculates an average difference of 13.5% between the low bid and the second lowest bid. Liberty neglects to consider that the low bid often is unresponsive to the Owner's requirements. No analysis is offered by Liberty establishing that the low bid was in fact responsive to ComEd's requirements.

In summary, in contrast with ComEd's established practices, procedures, and decades-long successful experience in procurement, Liberty presents not a shred of evidence to support its recommended reduction of almost $2 million. All Liberty has offered for the basis of its second-guessing are quotations from procurement articles having nothing to do with the actual procurements made by ComEd.

Q. Liberty claims that ComEd no longer uses time-based incentives because such incentives were temporary contracting mechanisms made necessary because of compressed schedules. (Audit Report at III-24). Is this an accurate statement of ComEd's contracting practices?

A. No. Although Liberty recommends no reductions on this theory, it introduces a concept beginning at page III-17 of the Report that is both dangerous and totally incorrect. The fact is that ComEd now contracts almost exclusively on a long term, partnering relationship basis with only a few contracting partners. These partners understand that failure to meet ComEd's service date requirements will mean the end of the relationship. So instead of risking a percentage of a specific contract value, they risk tens or hundreds of millions of dollars of future work. ComEd's incentives for timeliness are stronger than ever.

Q. In the section entitled "Liberty's Analysis of ABB's Excess Overtime and Expediting Costs", Liberty proposes disallowing large amounts due to allegedly excessive contractor overtime, relying upon manpower reports submitted to ComEd by ABB. (Audit Report at III-24). Is Liberty's disallowance for purportedly excess overtime by ABB correct or reasonable?

A. No. First, and most important, there should be no disallowance based upon a contractor overtime theory for any reason. The most fundamental reason is that ComEd's Six Pack projects were built for a reasonable cost, as described in detail earlier in my testimony. Second, it is particularly inappropriate to disaggregate and disallow overtime costs where the contractor was paid based on a fixed-price contract. The sole correct question concerning a fixed-price contract are whether ComEd got what it paid for, and paid a reasonable price. Under these contracts, ABB provided what it was required to construct and was paid a fair and reasonable price by any measure. The use of overtime is an entirely routine matter for large construction projects, there are no rules of thumb concerning "excessive overtime use" like those made up by Liberty, and use of overtime is a matter properly handled by the managers overseeing the labor based upon information available to them at the time decisions are made. While Liberty asserts that the allegedly excessive overtime must somehow have been embedded in the fixed contract price, as explained earlier in my testimony, there is no basis for such a claim since these projects came in at a cost equal to or better than ComEd's costs on other recent projects.

Liberty makes no effort to understand or explain in its Report the basic drivers of overtime use on construction projects in general, or the Six Pack projects in particular. This failure of analysis reflects such a fundamental lack of understanding of the construction and utility business as to render Liberty's recommendations and discussion without value.

Liberty apparently is ignorant of the fact that it is mandatory to fit a great deal of work (tie-ins, testing, enlivening, etc.) into relatively short scheduled equipment outages that usually are at night or on weekends when electrical load is low. Furthermore, overtime tends to increase toward the end of a project's schedule because many key tasks cannot be executed until the building is complete and, in the case of gas-insulated switchgear, placed in a controlled pressurization. Therefore, ComEd's projects could not have followed Liberty's made-up guideline of 20% overtime. Furthermore, Liberty's estimate of the degree to which overtime exceeded 20% is too high, because the manpower reports Liberty used were taken from a period when overtime was higher than normal, as discussed in more detail below. At page III-25 of the Report, Liberty cites overtime by M.J. Electric and Hyre Electric as particularly high. These electrical contractors were used specifically on work that was compressed into scheduled outage windows, often inside newly constructed buildings, and an "excessive overtime" disallowance obviously fails to reflect this basic business fact of the electrical contracting trades.

Overtime is used when it is more efficient than employing additional straight-time employees (even assuming such additional employees were available, which they often are not), as well as in circumstances where confined spaces make it physically impossible to put more workers safely and effectively on the job. Much work by definition will always be overtime (*i.e.*, nights, weekends, etc.) because straight time shifts cannot be staffed for these periods alone. These basic principles of overtime usage were followed by ABB and by ComEd for all of their respective work on the Six Pack projects.

Q. Liberty claims that the ABB contract "expediting costs" should be disallowed. (Audit Report at III-25 and III- 26). Please comment.

A. The ABB projects followed the normal project development cycle for ComEd and other utilities. The normal lead-time for major equipment exceeded the time available in this cycle. Therefore, expediting was necessary and reasonable. ABB's and ComEd's use of expediting services and methods was a normal and accepted method of increasing the likelihood of timely project completion, and reducing total project costs. Liberty fails to take into account that its "no expediting" recommendation poses a serious risk of missing the project in-service date, likely delaying service to customers for a year, merely to save a tiny percentage of the overall project costs. Liberty's position is not reasonable based upon electricity and construction industry management practices.

Q. Please comment on Liberty's use of certain ABB overtime reports as a basis for computing disallowances of allegedly excessive overtime.

A. After the Six Pack projects were well underway, ComEd asked for and ABB provided contractor overtime reports to support ComEd's efforts to comply with its contract obligations to IBEW Local 15 per the *Valtin* arbitration decision. Since the contracts with ABB were fixed-price, ComEd had no right to examine ABB's actual costs, and the actual amount of overtime was immaterial to the cost of the project to ComEd. It is therefore singularly inappropriate that these reports would be used to quantify a disallowance. Moreover, even if Liberty were correct in seeking to disallow overtime costs associated with a fixed-price contract, use of the ABB data is fatally flawed because the time period of the ABB reports is from late in the project when, due to the intense and complicated work scheduling, overtime was much higher than during other parts of the project. Yet Liberty uses the ABB overtime reports as if they were representative of the entire time period of ABB's work. This is another reason why Liberty's claim that a disallowance should be made because ABB exceeded Liberty's arbitrary and erroneous notion of a 20% limit on contractor overtime should be rejected.

Q. In Phase I of this Docket, you stated that the Staff-proposed disallowance for ABB time-related incentives should be rejected. (Phase I Rebuttal Testimony of James Williams, ComEd Exhibit 25.0CR, pp. 3-6; Phase I Surrebuttal Testimony of James Williams, ComEd Exhibit 47.0, pp. 2-4). The Interim Order adopted that disallowance, subject to Phase II of this Docket. Liberty also now recommends that that disallowance be rejected because it is not supported by the facts, although Liberty also suggests that its ABB "expediting costs" and overtime disallowance be adopted "in lieu" thereof. (Audit Report at pages III-26 through III-27). Please comment on Liberty's recommendation.

A. Liberty is correct that the ABB time-related incentives disallowance is not supported by the facts, for the reasons I previously stated and for the reasons presented in my discussion of ABB's work in this testimony. There is no reason to adopt other disallowances "in lieu" of an incorrect disallowance. Those two Liberty disallowances are incorrect, in any event, as I have explained.

Q. Liberty claims that ComEd employee overtime exceeding 10% should be disallowed from ComEd's capital costs. Please comment.

A. Liberty offers no rationale for this disallowance. It is incorrect and should be rejected. On the contrary, ComEd properly managed the balance between total permanent work force numbers and overtime. Liberty's solution of hiring more full-time employees would have increased ComEd's permanent employee totals by about 170 craft employees, at an annual and recurring cost of $23 million, to meet sporadic peak requirements better met through use of overtime.

Liberty claims that ComEd's employee overtime should be limited to 10%. Liberty applies this limit to every capital project indiscriminately. Liberty, on pages II-17 through II-23 of the Report, goes on to say that staffing levels should not fluctuate, the management/non-management ratio should not fluctuate, and that overtime should not fluctuate. In an environment in which the workload varies over time, the only way to achieve Liberty's desired performance is with an excess of permanent staff.

Liberty appears to be unaware that the construction of major utility facilities does not proceed using a simple linear workload. Many labor-intensive tasks cannot occur until other tasks, referred to as critical-path tasks, are complete. Furthermore, some key schedule dates, especially the major scheduled equipment outages, are inflexible. This requires the intentional scheduling of multiple concurrent activities that must be accomplished in time to meet the scheduled outage windows for tie-ins, testing, and enlivening. Hence, significant overtime is necessary to complete the critical path outage precursor activities.

The outages usually are required to be scheduled at night or on weekends when system load is low and the risk to system reliability is minimized. Liberty does not take into account that ComEd does not normally schedule night and weekend shifts, having made the prudent business decision that paying overtime on an as-needed basis is less costly than staffing ongoing shifts regardless of need. Thus, ComEd's participation within the outages also requires overtime.

In many cases, ComEd employees were required to travel to a project site some distance from their normal reporting locations. In such cases, ComEd authorized overtime to obtain a meaningful day's work at the site. Also, in any given week, ComEd employees may be required to respond to emergencies or storms. Because of the inflexible capital project schedules, the hours spent on emergencies or storms are additional to the employees' project responsibilities and result in overtime compensation.

It has been ComEd's business philosophy to meet intermittent demands for labor by using overtime and contractors rather than by hiring additional Local 15 employees. It would not be reasonable to build up a permanent staff to meet an intermittent demand. In fact, to comply with Liberty's goal of no more than 10% overtime for both O&M and capital, ComEd would have been required to hire approximately 170 additional craft employees at an annual recurring cost of about $23 million. This was calculated by taking Liberty's monetized values for "excess employee overtime" for both O&M and capital and dividing by $100 per hour to estimate the number of "excess" labor hours. (The $100 per hour rate includes the overtime compensation factor of 1.5 as well as corporate overheads and benefits.) The number of hours than was divided by 0.8 to account for vacation, training, holidays, sick time, etc. The resulting total of labor hours was multiplied by $65 per hour to determine the annual cost. The total adjusted labor hours were divided by 2,080 to determine the corresponding number of full time equivalents ("FTEs"). Given the completion of the Chicago Optimization Plan in a few years, and the introduction of technological innovations such as the Passport work management system that are expected to comparatively reduce the need for labor, using overtime and contractors was clearly the better alternative.

Q. In your testimony in Phase I of this Docket, you stated that the Staff-proposed disallowance for capitalized ComEd labor overtime should be rejected. (Phase I Rebuttal Testimony of James Williams, ComEd Exhibit 25.0CR,). The Interim Order adopted that disallowance subject to these further proceedings. Please comment on that disallowance in light of your analysis of ComEd's labor overtime.

A. That disallowance is incorrect for the reasons I previously stated and based on the further analysis of ComEd labor overtime presented in this testimony.

Q. Please comment on Liberty's claim that the Commission should disallow 5% across the board, totaling a $8.89 million disallowance of the cost of the Northwest, Kingsbury, Ohio Ring Bus, and Diversey projects. (Audit Report at III-29).

A. ComEd's project management followed all of the principles outlined earlier in my testimony, and ComEd's rigorous approach to project management resulted in ComEd meeting its aggressive goals for safety, timeliness, and cost control. Accordingly, there is no basis for any reduction based upon incorrect application of project management principles, or failure to use "good utility practice" as claimed by Liberty. (Audit Report at III-29).

Rather than analyze or criticize any specific aspect of ComEd's project management, Liberty simply invents a 5% reduction based on no more than a supposition that ComEd's project management did not follow good utility practice. Liberty neither defines any specific standards of performance nor cites any specific shortcomings.

Liberty does not identify any alternative courses of action that ComEd should have employed, or explain why it is unreasonable for ComEd to have employed them. Liberty fails to acknowledge the fundamental facts that during 2000 ComEd's project management performance was very good:

- The work was conducted safely. Many experts consider safety performance as the best single indicator of the effectiveness of a construction program. ComEd's contractor safety performance was better than the utility industry average and improved steadily throughout the audited period.
- Cost control was exemplary. Actual cost performance was tracked accurately, reported in a timely manner, and was within a small percentage of the approved aggregate project budgets for the audited projects. Seasoned estimating professionals prepared budgets and check estimates to ensure that ComEd was receiving fair value from its contractors.
- Service dates were met and the facilities functioned as intended. Although the work was incredibly complex, it was conducted in a planned, orderly manner with very few operating incidents or unplanned outages.

Hence, the facts do not support Liberty's arbitrary recommendation. Furthermore, this reduction is not logical and is unfair in the context of Liberty's other recommendations. If ComEd's project management had been ineffective, any resulting potential excess costs would have been associated with excess overtime, extra procurement costs, and unnecessary expediting. Liberty already has recommended elimination of costs on such theories. Therefore, Liberty's recommended 5% project management penalty not only is unsupported by the facts, but it also represents double counting by Liberty.

Q. With reference to non-ABB construction projects, Liberty claims that it sought but did not obtain from ComEd contractor overtime information, and suggests that ComEd was unreasonable for not tracking contractor man-hour information. (Audit Report at III-31). Please comment.

A. There is no standard practice in the construction or utility industries of constantly monitoring or tracking contractor man-hour information for fixed price contracts, like those complained of by Liberty. The only time such information would be tracked is for time and materials contractors, where contractor time is an element of computing compensation.

Q. Liberty claims that ComEd did not adequately document ComEd's vs. ABB's responsibilities in the Six Pack projects. (Audit Report at III-31). Please comment.

A. There is no merit in Liberty's criticism. As an example, Liberty criticizes ComEd for not tracking ABB's project budgets as they changed, often month-by-month. But it was not ComEd's role to track this information and this example simply reflects Liberty's lack of understanding of contracting processes. The contracts with ABB were for a fixed base price with incentives. Regardless of the changes in ABB's internal budgets, the only changes in cost to ComEd were through change orders, which followed a rigorous change control process. For additional control, ComEd retained professional cost estimators to verify that the price for the change orders was reasonable.

Liberty also criticizes ComEd for not providing preliminary estimates for the cost of the ComEd portion of the work. However, there was no business reason to perform such estimates since the costs of ComEd's labor were already budgeted within ComEd's functional organizations.

ComEd was able to proceed with a streamlined work process in relation to ABB's and ComEd's work for projects because ABB's key project resources were located in Chicago. ABB and ComEd communicated continually on issues of work performance on a real-time basis, working on a partnering basis. This eliminated the need for what sometimes seems to be excessive volumes of correspondence often necessitated where contractor and owner management are not co-located, or are not operating in as efficient a partnering as achieved by ABB and ComEd with the Six Pack projects.

Q. Liberty claims that ComEd's ABB contract documentation did not contain sufficient information analyzing the pricing of the ABB contract and scope changes. (Audit Report at 31). Please comment.

A. Liberty is incorrect. ComEd's approach to managing ABB's contract pricing was reasonable and consistent with construction and utility industry practices. ComEd's management obtained reasonable assurance concerning the pricing of the ABB contract through reliance on information available at the time decisions were made, including: (1) the contract price, which was competitively bid, (2) change orders that were driven by ComEd's refinements in the scope of work, (3) costs for the change orders that were estimated independently by ComEd's contracted professional estimators (Liberty elsewhere seeks to disallow the cost for this professional estimating support), and (4) change orders that were approved and project budgets that were modified using ComEd's formal change control procedures. As discussed earlier in my testimony, the actual prices paid through ComEd's process were eminently reasonable – and ComEd's thorough cost management processes caused the costs to be verifiably reasonable as work progressed.

Response To Liberty Report Findings On
Operations And Maintenance ("O&M") Costs

Q. What were your responsibilities in the operations and maintenance area during 2000?

A. A. I was part of the senior management team of ComEd's distribution operations during 2000. Based on my experience, I have personal knowledge concerning ComEd's management of operations, and a number of significant O&M areas were under my direct responsibility and control as well, including areas such as vegetation management.

Q. Liberty asserts that ComEd overspent in 2000 to address reliability problems that occurred in 1999, which were the result of under-spending in previous years. (Audit Report at II-1). Was ComEd's spending in 2000 due to under-spending in previous years?

A. No. In reality, 1999 overall was a year of improved reliability. ComEd's detailed reliability data show this to be the case. What happened in 1999 were a few outages that affected the Chicago Central Business District and therefore had significant socio-political consequences. As a result, ComEd's customer satisfaction survey results were lower than those of many other utilities having comparable or poorer reliability.

In response, in 1999 ComEd assembled a world-class team of experts, including ABB, GE, and EPRI, to analyze the specific reliability issues in the Central Business District and develop a solution. This solution, called the Chicago Optimization Plan, included recommendations that required additional capital and O&M spending in 2000 and beyond. This spending was due not to under spending in previous years, but rather to new ways of analyzing system reliability. The new method of reliability analysis also was used for areas outside Chicago, not because of poor reliability, but because it was important to maintain comparable standards of reliability for different areas. Thus, additional O&M and capital spending was required outside Chicago, as well.

Q. Liberty asserts that there was a “a sacrifice in work efficiency” during ComEd’s year 2000 operations. (Audit Report at II-1). Is this correct?

A. No. Actually, ComEd’s productivity, which was measured daily in many areas, improved significantly during 2000. Productivity improvement was a major initiative of then-ComEd Distribution President Carl Croskey, and it was successful.

Q. Is Liberty’s conclusion correct that starting in the year 1998, ComEd’s distribution O&M expenditures increased significantly? (Audit Report at II-3).

A. No. Actually, according to the data Liberty presents on page II-4 of the Report, O&M spending increased in both 1996 and 1997.

Q. Please explain the reduction in O&M spending for 2001 as reflected in the graph of annual spending at Page II-4 of the Audit Report.

A. The reduction in O&M spending for 2001 was possible only because: (1) productivity increased due to year 2000 initiatives, and (2) initial merger synergies were achieved. This was not an accident. Enormous amounts of hard work of thousands of people stand behind these achievements.

Q. Liberty’s Report states that “Liberty found that … the amounts spent were far in excess of what would have been required to maintain safe and reliable service had it not been for under-spending that occurred in the earlier years, the resultant reliability problems that occurred primarily in 1999, and a sacrifice in work efficiency." (Liberty Report at II-4). Do the available data confirm Liberty's conclusion?

A. No. Overall reliability in 1999 was better than in previous years. Productivity, which was measured daily, improved steadily through the year. The five bullet points in this paragraph are irrelevant. Liberty's suggested rate base reduction is totally unrelated to any specific "findings".

Finally, Liberty cites the fact that ComEd's future 2002-2003 budgets and preliminary 2004 projections are expected to decrease as evidence that 2000 spending was too high. The fact is that the future year budget reductions rely on specific (at the line item level) savings due to increased productivity, merger synergies, and technologies such as the Passport work management system. ComEd is assuming financial risk by basing its profitability plan in part on declining future year budgets. The amount of work required to operate and maintain the system is increasing over time. ComEd's reliability targets will become ever higher in the future.

Q. Liberty's Report claims that it could not arrive at line item identification of O&M disallowances due to alleged insufficiencies in ComEd data. (Audit Report at II-5). Please comment.

A. Liberty's statements in the Report fail to identify any specific basis to support its rate reduction and attempt to blame ComEd, stating that "ComEd did not have cost information that would permit separate line item identification…." It is important for the Commission to note that Liberty has not identified or provided any reasons for any single adjustment based upon reasoned analysis of ComEd's O&M practices. During my tenure at ComEd, I was impressed by the qualifications, training, dedication, and performance of

ComEd personnel. It is not a surprise that Liberty has failed to identify any specific operational weaknesses and has had to rely on generalizations and line-drawing in order to support claims for rate reductions in a time of increasing work loads and increasing prices for goods and services that ComEd uses to provide its service.

Q. Liberty made a number of assumptions stated at page II-8 of its Report in arriving at its recommendations concerning ComEd's test year O&M expenses. Are these assumptions reasonable?

A. No. As a concrete example, in the first bullet point, Liberty assumes that O&M expenses were "reasonable" in 1991 and 1992, and by implication "not reasonable" in all other years. No basis for the assumption is presented. In the second bullet, Liberty assumes that ComEd's 2004 preliminary projection target is reasonable. Liberty apparently does not understand the basis for the 2004 projection. The goals in the 2004 projection are based on specific, quantifiable reductions due to increases in productivity, technology (such as Passport), merger synergies, and supply chain initiatives including outsourcing. These cost savings initiatives, many of which are merger related, were not in effect during 2000. Their success in 2004 is not automatic. ComEd's success in operating within the 2004 projection is at risk and depends on, among other things, strong operational performance. The amount of work required to operate and maintain the distribution system that is included in the projection does not decrease – it increases over time.

Q. As part of its analysis of O&M expenditures, Liberty creates a "constant-percentage annual increase function from the 1991 corrected total through the 2004 corrected total for accounts 580-598." (Audit Report at II-9). Is Liberty's approach valid?

A. No. Liberty uses 1991 and 2004 as “reasonable” years and attempts to calculate an allowable “annual cost increase function”. The reasons why 2004 is not comparable to 2000 are explained above. But in addition, Liberty’s approach here introduces a mixture of actual spending (1991-2001), and planning-level targets (2002-2004). To be valid, budgets should be compared to budgets and spending to spending. Liberty presents no evidence that 1991 is the appropriate “end point” for comparison. Indeed, inspection of the data on page II-10 of the Report shows that using the years 1991 and 2004 results in the lowest possible annual increase. Clearly, this is a biased approach.

Q. Liberty attempts to relate annual O&M cost increases to growth. (Audit Report at II-10). Is this an appropriate measure for O&M expenses?

A. This is an inappropriate measure because, in so doing, Liberty ignores the critical measure of growth – peak electrical load – and presents data only on numbers of customers. Customer count information is practically useless on the ComEd system. One new customer may be one new three-bedroom house or it may be a new high-rise condominium or even a new 100 MW “internet hotel”. System planners and engineers respond to electrical load data, specifically summer peak loads. They do not respond to overall average loads, but rather to specific circuits. Peak load growth, both in Chicago’s Central Business District, and in fast-developing suburbs, was very high during the test-year period. Liberty also ignores the fact that in 2000 system planners and engineers were responding to new and more stringent criteria for forecasting reliability. Using the new criteria, more work was required to achieve the same predicted reliability. In summary, Liberty’s approach has no factual basis, is biased, and ignores the facts that

ComEd's 2000 O&M spending accommodated significant electrical load growth and resulted in significantly improved reliability.

Q. Liberty makes some general observations about the nature of the electric utility business over the past 15 to 20 years at page II-11 of its Report, saying at the same time that things have changed and remained the same. Please comment.

A. The conclusion of the first paragraph is a *non sequitur*. In the first sentence, Liberty states that delivery of electric service has stayed the same from a technical perspective. In the second sentence, Liberty says that from a technical perspective delivery of electric service has changed; *i.e.* with advances of microprocessor-based relays and SCADA systems. From this, Liberty concludes that customers should expect improved reliability for about the same cost. This is absurd. Technological improvements cost money, too, reliability expectations have increased, and it is difficult to think of any good or service used to provide electric service that has not gone up in price in the past 15 to 20 years. Liberty's words may sound good, but to a person actually engaged in operating in construction and utility environments and building facilities over the past fifteen to twenty years, Liberty is speaking nonsense.

The second paragraph is illogical and concludes with an unrelated tautology. It makes several statements that spending less now means spending more later, trimming fewer trees now means trimming more later – then caps these statements not with a quantification or an analysis of these costs or actions that one might think would follow, but with an unrelated statement that "[i]n the case of ComEd and the year 2000, special studies and reporting were required because of the reliability problems it experienced." (Audit Report at II-11).

I have served in construction and management capacities for major projects and substantial companies, as well as served as a university faculty member. This kind of unlinked, but superficially appealing rhetoric would not be accepted by individuals with critical thinking abilities in any business or academic setting.

Q. At page II-12 through II-13 of the Report, Liberty points to about $9.8 million from test year O&M in incentive compensation that it says should have been charged to capital. Please comment.

A. Liberty neglects to state that if this amount is disallowed from O&M, it should be added back into capital. This point is further discussed in the ComEd Phase II direct testimony of Jerry Hill (ComEd Exhibit 112.0).

Q. Is Liberty's statement that when vegetation makes contact with electrical lines, a hazardous condition to the general public may result and there can be distribution circuit outages true for all ComEd facilities? (Audit Report at II-13).

A. This statement is true on the ComEd system for voltages above 4 kV. Tree contact has little, if any, effect on 4 kV lines.

Q. Please comment on the chart of tree trimming expenses presented by Liberty. (Audit Report at II-14).

A. I was the executive responsible for supervision of tree trimming programs in 2000. Inspection of the chart at the top of the page shows that year 2000 spending was right on the trend line from the early 1990's. Year 2000 appears to be a typical year. The chart devoted to tracking the number of circuits trimmed per year is meaningless. Some circuits are very fast, easy and cheap to trim; rural farmland is a good example. Other circuits are very slow, difficult, and expensive to trim; Chicago's affluent northern suburbs are a good example. Some circuits can be trimmed entirely using bucket trucks; others require trimmers to climb into the trees. Furthermore, the definition of what represents a circuit has changed over time. The values shown for 2003-2006 are merely the total number of circuits divided by four, not the result of any specific planning. But, if one wishes to accept these data, when combined with the cost chart at the top of the page, the values show that during 2000, ComEd trimmed more circuits at a lower unit cost than it had in other years. This is not a reasonable basis for assertions of inefficiency or a recommendation of reductions in O&M expense.

Q. Please explain ComEd's decision to contract with Asplundh Tree Expert Company and to terminate the contract with Wright Tree Service. (Audit Report at II-14 – II-15).

A. ComEd entered into a contract with Asplundh because ComEd expected improved performance and cost effectiveness. ComEd did not decide to enter into a partnering relationship with Asplundh because ComEd could not effectively manage multiple contractors. Thus, Liberty errs when it states that "[w]hile it may have been a good decision to change to a single-source contractor to improve the effectiveness of its tree trimming efforts, ComEd never explained why it could not effectively manage multiple contractors, or why the need to terminate the Wright contract (and others) was not caused by ComEd's prior failure to manage tree clearing in a consistent and sound manner." This statement is simply baffling. Liberty fails to establish that ComEd's tree trimming program in the 1990's was deficient. The Wright contract was terminated because ComEd's management believed it could achieve better value through a contract with Asplundh.

Q. At page II-15 of its Report, Liberty states that "[a] key determinant of the effectiveness of electric utility vegetation management is the amount of work performed for the costs expended." Using Liberty's criterion, what conclusions can you make regarding ComEd's test year vegetation management expenses?

A. Using this criterion, 2000 was the most effective year ever for vegetation management at ComEd. The Report data show that in 2000, ComEd's tree trimming cost was about $2900 per mile, not including the Wright termination cost. The cost for terminating the Wright contract was only worth about $ per mile. By contrast, the cost per mile was about $6,000 in 1999, $4,600 in 1998, and $4,000 in 2001. Liberty's data show that ComEd achieved high value in its tree trimming program during 2000.

Q. What is the predictive value of Liberty's chart of the circuit miles trimmed covering a period 1996 – 2006? (Audit Report at II-16).

A. The chart showing miles trimmed per year should not be used to make statements about the future. The values shown for 2003-2006 are merely the total circuit mileage divided by four. They are not the result of any specific planning and will be changed when the project planning takes place. In the paragraph following the chart, Liberty states, "ComEd's tree-trimming cycle had effectively reached 5.7 years…. The effect of under-spending in those years caused distribution system reliability to fall to a point where ComEd had to take extraordinary measures…." Liberty's data on page II-14 show that ComEd began substantially increasing its budget for tree trimming in 1995 and that expenditures peaked in 1999. Also, distribution system reliability improved in 1999 and again in 2000. The notable outages in downtown Chicago in 1999 were unrelated to trees. ComEd believed that to improve the performance of its tree-trimming program, fundamental changes were necessary. This is the reason the contracts with Nelson and Wright were terminated and the alliance with Asplundh was initiated. As was shown in the section above, ComEd's cost-effectiveness improved in 2000.

Q. Is Liberty's assumption that "ComEd's year 2000 actual per circuit-mile cost represents a conservative estimate of the appropriate unit costs for tree trimming" correct? (Audit Report at II-17).

A. Liberty assumes that the cost per mile in 2000 would be "conservative" because of additional years of tree growth between trimmings. In reality, Liberty's data show that the cost per mile in 2000 was far less than in other years, including 2001. Using Liberty's suggested cost per mile would introduce a bias to the detriment of ComEd. Further, Liberty's methodology of "normalizing" the amount of work performed in 2000 by using a multi-year average is erroneous. The relatively low cost per mile in 2000 was achieved in part because of the economy of scale achieved. Artificially reducing the scale while retaining the lower cost is inconsistent and illogical. Indeed, Liberty's approach results in the lowest possible allowance for ComEd. The data show that: (1) ComEd began to increase annual tree trimming budgets not in 2000, but in 1995; (2) year 2000 total tree trimming expenses were lower than those in 1999 or 2001; (3) the unit cost for tree trimming in 2000 was lower than in preceding or subsequent years; and (4) vegetation management safety performance improved steadily throughout 2000 and 2001.

Q. Please comment on Liberty's observations concerning ComEd's staffing levels. (Audit Report at II-17 – II-24).

A. Liberty cites fluctuations in ComEd's total staffing of almost 10% over a period of six years, 1997-2002. This is a relatively stable level of resources. Inspection of the figure at the top of page II-18 of the Report shows that resources levels were very stable during this period. 2000 looks like a typical year.

Q. Do the data Liberty relies upon to conclude that resource fluctuations were "significant" in 2000 support its conclusion? (Audit Report at II-18).

A. No. Contrary to what the figure on this page clearly shows, Liberty concludes that resource fluctuations were significant in 2000, resulting in unallowable inefficiency. Furthermore, as explained above, productivity was measured intensively and increased steadily throughout 2000.

Q. Please explain the methodology used by Liberty to calculate "excess management staffing" expenses in the test year. (Audit Report at II-19).

A. Liberty indulges in some very biased analysis here. They calculate a ratio of management to non-management personnel for selected years and suggest reducing ComEd's O&M costs by $12.5 million because of "excess management staffing". However, inspection of Liberty's data on page II-19 of the Report shows that ComEd's management headcount in 2000 was actually lower than it was in 1999 or 2001. The management/non-management ratio was very slightly higher in 2000 because non-management headcount decreased even more. The specific management/non-management staff ratio at any given time will be a function of a number of factor, ,including organizational structure, contracting, outsourcing, retirements, and management strategy (*e.g.* close management versus empowerment). To arbitrarily select a particular ratio, within a range of reasonable values that fluctuate for a wide range of reasons, and then recommend a disallowance based upon such a particular ratio does not reflect reasonable management judgment. Rather, it is not consistent with the kind of judgment reasonable managers make in either the utility or construction industries. Liberty's proposed O&M adjustment asserted on this basis should be rejected.

Q. Liberty asserts that various changes to management structure resulted in hiring and rehiring almost 300 employees, mostly management. (Audit Report at page II-20). Please comment.

A. Liberty in the first paragraph apparently confuses "reselection" with "rehiring". After the merger when organizations were substantially changed, every management employee (including vice presidents) was required to re-compete for his or her job. This is considered a best practice among high-performance organizations because of its intrinsic fairness and competitiveness. Hundreds of management personnel were "selected" in 2000. This was not synonymous with turnover as Liberty implies.

Q. Liberty compares overtime percentages and costs for various years in order to draw the conclusion that overtime was too high in 2000. (Liberty Report at II-22). Is this consistent with its previously stated methodology?

A. Once again Liberty uses inconsistent logic and methods to the detriment of ComEd. In the figures on this page, Liberty compares overtime percentages and costs for various years in order to draw the conclusion that overtime was too high in 2000. Apparently Liberty has forgotten its own main thesis – that ComEd under-spent in previous years. If Liberty accepts its own premise, then the conclusion must be that if previous years were too low and 2000 was higher, then 2000 must be better. ComEd, like most other companies, believes that it is more cost effective to use overtime as opposed to hiring additional employees to handle fluctuations in workload. This avoids the trap of creating a permanent staff at too high a level because of a short-term labor requirement. Liberty, however, based on its criticisms on pages II-17 to II-23 of the Report, believes that staffing levels should not fluctuate, the management/non-management ratio should not fluctuate, and that overtime should not fluctuate. The only way to achieve Liberty's desired performance is with an excess of permanent staff. Liberty's proposed solution would be far more expensive than ComEd's actual performance, and is not a solution that a reasonable utility manager would select. Liberty's criticisms in this area should be rejected.

Q. On page II-25 of the Audit Report, Liberty states that "a material portion of the inspection and correction costs resulted from atypical efforts. The Commission should not permit this portion to be included in revenue requirement calculations." What data do Liberty provide to support its recommendation?

A. Liberty fails to provide any basis for this statement or provide any estimate of typical or atypical costs. This entire section of the Report apparently is included to provide some sort of general support for Liberty's overall recommended revenue requirement reduction. However, careful reading and attention to the actual data do not support any reduction.

Q. Please comment on Liberty's treatment of ComEd's thermographic inspection program. (Audit Report at II-26).

A. Again, we have a section of the Report included to provide some sort of general support for Liberty's overall recommended revenue requirement reduction. Liberty acknowledges that the cost of these inspections is typical. However, Liberty points out that the number of corrective maintenance actions resulting from thermographic inspections was higher in 2000 than in 1999. Liberty does not estimate the cost of the additional maintenance, nor account for the offsetting savings associated with improved reliability, such as longer equipment life and avoidance of overtime spent responding to outages.

Q. Please comment on Liberty's treatment of ComEd's underground inspections. (Audit Report at II-26 – II-27).

A. As with the thermographic analysis, Liberty here seeks to eliminate the cost of additional inspection and maintenance without accounting for the cost of the benefits derived.

Q. Please comment on Liberty's analysis of ComEd's Corrective and Preventive Maintenance. (Audit Report at II-28 – II-29).

A. This section is typical of Liberty's approach to the analysis of O&M expense – Liberty spends almost two full pages of text explaining why "data constraints proved particularly disabling to efforts to analyze or trend data over time", and then in the final paragraph pulls out one very specific data element in an attempt to support a broad, unjustifiable rate reduction recommendation. Based upon my experience as a manager in a number of substantial utility and other business operations, this is not an analysis upon which reasonable managers would make budget decisions.

Time and again, Liberty's claims about data do not revolve around whether managerial accounting data met ComEd's management needs, which is the test of good managerial accounting systems. Rather, Liberty complains consistently that the data were not collected in a manner that contemplated and made easy an after the fact analysis by people unfamiliar with ComEd's business. Such a criticism is obviously based on hindsight and is not at all directed to whether ComEd's business practices were reasonable based upon information available to managers at the time decisions were made.

Q. Liberty claims that the costs of responding to third-party reports and recommendations should be excluded. (Audit Report at II-30). Is this correct?

A. If the reports and recommendations have any value, then their costs should be included. Including the costs of such efforts in the revenue requirement is perhaps the best method for ensuring that such costs are prudently and reasonably incurred when they are ordered or requested by responsible authorities.

Q. Referring to the chart on page II-33, Liberty compares adjusted 2000 spending with the average of years 1991-1997. (Audit Report at II-32). Is this a fair comparison?

A. No. Liberty again changes the reference standard in order to bias the analysis. Although on page II-8 of the Report, Liberty had assumed that spending in 1991 was “reasonable”, here Liberty used the average of several years as a standard to make year 2000 spending appear comparatively larger. The result of the analysis would be more balanced if Liberty had used consistent methods and calculated an annual rate of increase from 1991 through 2000. Indeed, inspection of Liberty’s chart on page II-33 of the Report shows that the year 2000 falls along the trend line from 1995 or 1996. I doubt that 2000 would be considered a statistical outlier on a regression-based trend line for any multi-year interval. It is the year 2001 that appears anomalous.

Liberty’s comments suggesting that O&M spending changes should be limited to a 3% increase in labor costs are unrealistic. The ComEd O&M spending was driven by the need to do more work because of the introduction of more stringent reliability analyses in 1999. Furthermore, Liberty’s peer group (T&D) data presented in Appendix

C (pages II-54 through II-57 of the Report) show that ComEd's peer group of utilities experienced average annual cost increases of 4% from 1991-2001.

If the test to be applied is whether ComEd's management conduct was consistent with that of reasonable utility managers, and Liberty is criticizing ComEd for not meeting that standard based on the peer group comparison, then the analytically consistent solution would be for Liberty to advocate 4% annual cost increases from 1991 to 2001, with a resulting O&M revenue requirement that obviously would far exceed the 3% annual cost increase applied by Liberty, and would probably exceed ComEd's actual 2000 O&M expenditures.

Again, the difference between the 3% annual figure urged by ComEd, compared with the 4% peer figure, supports the conclusion that Liberty's selection of the 1991 and 2004 beginning and end points for its "straight line analysis" results in the greatest possible disallowance and smallest possible increase in O&M for ComEd. This is part of an overall pattern in the Report of changing evaluation bases from one item to another in order to select the worst possible result for ComEd. A reasonable manager analyzing data would use a consistent basis for analysis – not the selective "ComEd worst case" approach consistently taken by Liberty – demonstrating systematic bias against ComEd in Liberty's analysis.

Q. Liberty uses an average of 1991-97 for overhead distribution overhead expenditure, instead of the actual 1991 overhead distribution expenditure for its analysis and conclusions at page II-35 of the Report. Please comment.

A. This is another patent demonstration of bias by Liberty. Without any explanation, Liberty rejects its prior use of 1991 data in favor of using an average of 1991-1997 overhead distribution expenditure. Liberty's use of an average rather than the comparatively higher actual 1991 data permits Liberty to characterize ComEd's 2000 expenditure as being at greater variance than it would be using Liberty's 1991 data methodology, creating a biased result. In academic or good business analytic circles, catching this type of data manipulation is considered proof of suspect and deceptive analysis.

Q. Please comment on Liberty's discussion of its chart at page II-36 of the Audit Report.

A. Liberty uses the average of 1991-1997 spending instead of its own previous reference point of 1991 to create a particular result. In contrast with Liberty's stated conclusion, actual inspection of Liberty's data on page II-37 of the Report shows that year 2000 spending was along the trend line from 1994-2001. A fair analyst could just as well have pointed out this observation and conclusion, which is favorable to ComEd under Liberty's analysis.

Q. For its Peer Group Analysis, Liberty uses ComEd's Transmission and Distribution O&M expenses combined instead of the appropriate Distribution-only expenses. (Audit Report at II-46). How does this affect Liberty's conclusions as they apply to ComEd's distribution system expenses?

A. The resulting conclusions are misleading. Hence the graphs on pages II-47 and II-48 of the Report as well as the entirety of Appendix C, are worthless. For example, the graph on page II-56 shows ComEd's 1999-to-2000 annual percentage increase to be more than 27%. Liberty's data for ComEd's distribution system, shown on page II-33, show an actual increase of perhaps 12%. All of Liberty's peer group comparisons have this flaw – T&D data are used to draw conclusions about the distribution (only) system. Using this methodology, there is no way to know the degree to which the conclusions drawn by Liberty were biased by transmission system spending. In fact, inspection of ComEd's distribution system spending does not indicate support for Liberty's Conclusions and Recommendations.

The peer group comparisons have another fatal flaw. The spending data from a single utility are plotted on graphs against the average of "a large group of other utilities" (explained on page II-46 of the Report). Liberty then draws conclusions about variations in spending at a single utility (ComEd) versus the average spending of many utilities. This is statistical nonsense. The raw data sampled from a single source is not comparable to the statistical mean of several sources – the mean value trends will not vary as much. This is the statistical principle of central tendency. For valid results, Liberty should have plotted all the individual utility data on a graph, or performed statistical tests to determine whether ComEd's spending was significantly different from the peer group's, for a given level of statistical precision. Reasonable utility and construction industry decision makers would not make decisions based upon such data, when better analysis and data may be had, and neither should the Commission. Liberty's assertions that ComEd's O&M expenditures were too high based upon such invalid and analytically meaningless methods should be rejected.

Q. Please summarize your testimony.

A. My testimony is based upon a career in construction and utility management, and active participation in ComEd's major capital projects, including the Six Pack, as well as daily involvement in O&M decision making during 2000, the test year in this proceeding. Based upon my knowledge and experience, ComEd's costs of constructing its Six Pack projects were reasonable and should be approved by the Commission. Liberty's criticisms of ComEd's contracting and construction management with respect to the Six Pack and other projects are factually incorrect, do not reflect consideration of alternatives and factors considered by reasonable utility and construction industry managers, and should not be relied upon as a basis for disallowing capital costs. Liberty's criticisms of ComEd's O&M costs do not assess what ComEd's actual costs and activities were in 2000 and whether they were reasonable. Liberty's efforts to make statistical comparisons and trim ComEd's O&M revenue requirement by "normalizing" cost growth at 3% per year from 1991 to 2004 have no basis in utility or construction industry management practices or analysis, and should be rejected.

Q. Does this complete your Phase II Direct Testimony?

A. Yes.